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Government of Trengganu

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# The Annual Medical and Sanitary Report

for the year ending 31st December, 1928.

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FRASER & NEAVE, LTD., PRINTERS,

1929.



PERHENTIAN ISLANDS

# TRENGGANU

Scale 14 Miles to 1 Inch

REFERENCE

Metalled Road

KELANTAN

KUALA BRANG

KUALA BRANG

MARANG

CHINA SEA

TRENGGANU

DUNGUN

PAKA

KRETAI

KEMAMAN

PAHANG





# TRENGGANU

## The Annual Medical and Sanitary Report for the Year Ending 31st December, 1928.

### I. ADMINISTRATION.

#### (a) Staff.

The appointment of Medical Officer was changed to Chief Medical Officer from 1.7.28.

Dr. N. H. Harrison was promoted to Chief Medical Officer and remained in charge throughout the year.

The appointment of Health Officer has not yet been filled.

The new appointment of Maternity Nurse in charge of the maternity ward and ante natal and infant welfare clinic was taken up by Miss R. Moreira on 21.2.28. Her services were terminated on 14.10.28. The appointment has since remained vacant.

Mr. T. A. Menon remained in charge of the Town Dispensary Kuala Trengganu.

Mr. Ceng Dieu Huang relieved Mr. T. K. Maurice as dresser in charge of the Dispensary Kemaman on 7.2.28 and remained throughout the year.

Inche' Gaffor bin H. Smahon was appointed dresser in charge of the new Dispensary at Dungun on 1.3.28 and remained throughout the year.

Inche' Alias bin Esa was appointed dresser in charge of the new Dispensary at Besut on 27.2.28 and remained throughout the year.

Mr. T. K. Maurice was transferred from the Dispensary at Kemaman on 1.3.28 and was posted to the new Dispensary at Kuala Brang where he remained in charge throughout the year.

A scheme for dressers on lines similar, with regard to pay and privileges, to those obtaining in the Straits Settlements and Federated Malay States was approved by Government and came into operation on A.H. 1.1.47 (19.6.28).

#### (b) List of Ordinances affecting public health enacted during the year.

An enactment for the registration of medical practitioners was passed by Government and came into force on A.H. 1.1.47 (19.6.28).

#### (c) Financial.

The financial year of the Trengganu Government closed on A.H. 29.12.46 (18.6.28).

Headings.	Year A.H. 1345.	Year A.H. 1346.
	\$	\$
Revenue from sale of medicines and hospital fees .. .. .	1,372.95	1,049.55
Expenditure .. .. .	41,081.81	52,755.78
The total revenue of the State .. ..	1,364,104.68	1,402,150.63
The total medical and sanitary expenditure..	70,000.00	90,000.00

## II. PUBLIC HEALTH.

## (a) General Remarks.

For a proper understanding of the problems of public health, and the difficulties met in curative medical work in Trengganu, it is essential that certain radical considerations should be kept in view. It may therefore be germane to this report to indicate these. It should be stated at once that the bulk of the population is Malay. Malay influence dominates. The chief officers of Government, apart from the Europeans, are Malay. These officers for the most part are local products, and their outlook has been determined largely by local experience. Tradition has been, and is still, to a large extent the rule of life. The town, and village folk, and peasants follow the direction of their social superiors as well as the local tradition in which they are reared. Customs are adhered to whether they are good or bad because they are customs. Disease is closely associated with divine visitation and is only vaguely related to cause and effect. The people, generally speaking, are illiterate, and knowledge other than that gained by experience is obtained by hearsay. The Malay is not receptive to new ideas when these ideas, as in medicine and public health, appear to conflict with his customs. He is slow to act on logical conclusions for example he will suffer epidemics of dysentery and make no attempt to prevent them even when he is told, and is convinced, that these epidemics are caused by insanitary surroundings. Polygamy, and domestic involvements, with easy divorce militate against a virile mental and moral life with the result that discipline in social affairs is resented. In public health a consciousness, that individuals must sink personal predilections, if such are opposed to the good of the many, is almost absent.

It is clear then that progress in public health work will be slow as the acceptance of curative medicine has been, and is slow.

The prevailing diseases recorded during the year compared with 1926 and 1927 are given in the table following:—

	1926.	1927.	1928.
Yaws .. .. .	4,828	2,168	2,921
Diseases of Digestive system .. ..	1,641	2,590	4,851
Diseases of the skin .. .. .	1,578	2,997	7,041
Diseases due to Intestinal Parasites ..	1,396	1,324	1,913
Fever unspecified .. .. .	1,236	574	705
Malaria .. .. .	1,007	2,016	3,089
Influenza .. .. .	831	1,173	1,248
Diseases of the respiratory system ..	400	512	1,286
Beri Beri .. .. .	260	536	1,531

The seasonal incidence of Malaria, Influenza, Fever unspecified, Dysentery and Beri Beri is given on a graph as an appendix to this report.

## (I) General Diseases.

*Skin diseases* once again occupy the foremost position in the list of general diseases. The total number of cases treated was 7,041. The tinea group predominates. It is seen mostly in the peasant and in the poorer classes in the towns. Contagion is inevitable owing to the absence of hygiene and the overcrowding of the small dwellings in which the majority of the natives live.

*Beri Beri* occurs only in those areas where polished rice is the staple food, and principally during the season, or immediately afterwards, of the North East moonsoon when supplies of rice and other carbohydrate food are short. The peasants in the interior grow their own paddy and whilst other articles of diet are sometimes difficult to obtain beri beri is not noticeable amongst them, if it occurs at all. The seasonal incidence of this disease is more or less the same year by year. The North East moonsoon usually commences early in November and lasts until March. The graph shows the Beri beri curve rising in December gathering momentum in January, February and March reaching its apex in April after which there is a gradual decline to August. It remains stationary from September to November. The total number of cases treated was 1,531.

## (II) Communicable Diseases.

*Mosquito or Insect-borne.*—Malaria. There has been no reason to alter the opinion expressed in last year's report that malaria is a disease of the interior and does not occur along the sea board. This opinion is founded only on the clinical experience of



those responsible for diagnosis and is no way dogmatic. The question will engage the attention of the health officer when he arrives. The total number of cases treated was 3,089. The seasonal incidence is indicated on the graph.

*Infectious Diseases.*—Dysentery. Reports of small epidemics have been received from time to time from Besut, Dungun, Marang, and Kemaman. The number of cases in each epidemic is small and the mortality low. The total number of cases treated during the year was 207 with 8 deaths. The seasonal incidence is indicated on the graph.

*Influenza* was present throughout the year in one form or another. The cases have been mild and complications rare. All races were attacked alike. The seasonal incidence is indicated on the graph. The number of cases treated was 1,248.

*Mumps.*—There was an epidemic of mumps in the district of Kuala Trengganu commencing in August continuing to December: It is not possible to estimate the total number of cases as only a small proportion came for treatment. The Malays recognize this disease and dismiss it as unimportant because it is neither mortal nor incapacitating. Fifty-four cases were treated at the Town Dispensary Kuala Trengganu. No death from this disease was recorded. One European woman and her small son were victims.

*Yaws.*—This disease continues to take a heavy toll in sickness in childhood, and disability in adult life. Whilst treatment has reduced the number of cases in the towns where treatment is available the villages are still heavily infected. In course of time regular and systematic visiting of the villages will be undertaken. At present treatment has of necessity been confined to those areas in which dispensaries are situated. Dressers in charge of the dispensaries have been instructed to travel in their districts, but transport is slow, and the scope of work is restricted by time and distance, if the routine work of the dispensaries is not to suffer. Travelling dressers trained in the treatment of yaws will be appointed as means become available.

The total number of new cases treated during the year was 2,921.

Systematic treatment which commenced 4 years ago has been continued at the Town Dispensary Kuala Trengganu. The work of the other dispensaries in connection with the treatment of yaws has not been so progressive as was anticipated. As confidence is established it is hoped that reticence and the natural abhorrence of the injection needle will be overcome and the sufferers from yaws will avail themselves of the treatment which they acknowledge is the only adequate treatment for this disease.

The taking of detailed histories and clinical manifestations, for the most part of children, has been continued during the year with a view to ascertaining facts regarding the mode of communicability of this disease, and its relation, if any, to locality and environment. 284 histories have been taken up to 31.12.28.

Treatment has been by intramuscular injection of Bismuth Sodium Tartrate. The dose has been from 1—5 grains. Neosalvarsan and Sulfarsenol has been used in a series of cases for comparison with Bismuth Sodium Tartrate. The results have been similar. The cost of Bismuth Sodium Tartrate is low compared with the arsenical compounds and is therefore the drug of choice for mass treatment.

The analysis of cases treated, as given in the reports of 1926 and 1927, is amplified by the addition of cases treated during 1928, and may be accepted as further evidence of the therapeutic value of Bismuth Sodium Tartrate in the treatment of yaws.

Experience has shown that patients usually attend until all obvious lesions have disappeared.

It has to be recorded that a few cases have returned for further treatment of new lesions which have arisen subsequent to a course of injections. The intervals since previous treatment have varied between 3 months to 3 years. All these relapses have occurred in adult patients, who in the first instance presented chronic tertiary lesions. No cases of children adequately treated in the primary and secondary stages have relapsed.

Treatment of 6,330 cases of Yaws by Bismuth Sodium Tartrate.

Number of injections.	Number of cases.	Percentage of cases.
1	4,596	72.60
2	1,764	19.97
3	260	4.10
4	111	1.75
5	48	.76
6 and over	51	.80

**Helminthic Diseases.**

The total number of cases of helminthic diseases was 1913. The type of worm, or combination of types, may be gathered from the microscopic examination of stools. The ova of the various worms were found as follows:—

Ankylostomum duodenale .. .. .	22
Ascaris lumbricoides .. .. .	175
Trichocephalus dispar .. .. .	73
Oxyuris vermicular's .. .. .	21
Anky, Ascaris and Tricho .. .. .	327
Anky and Ascaris .. .. .	123
Anky and Tricho .. .. .	64
Ascaris and Tricho .. .. .	873
Negative .. .. .	50
<b>TOTAL ..</b>	<b>1,723</b>

**(b) Vital Statistics.**

(1) *General Native Population.*—The population at the last census in 1921 was 153,765 divided by race into Malays 145,523, Chinese 7,246, Indians 211, Europeans 34, and other nationalities 751.

The population in the decade 1911—1921 showed a decrease from that in the decade 1901—1911. There is at present no reason for expecting an increase of population in the decade 1921—1931; indeed the excess of the number of emigrants over immigrants, and the higher death rate compared with birth rate, indicate a further decrease. The numbers of emigrants and immigrants during the last five years are given in the table following:—

Year A.H.	Immigrants.	Emigrants.
1342	3,995	3,322
1343	4,767	3,293
1344	9,878	10,116
1345	12,375	14,589
1346	11,843	12,546
<b>TOTALS ..</b>	<b>42,858</b>	<b>43,866</b>

The excess of death rate over birth rate during A.H. 1346 was 1.90 per mille per annum.

Vital Statistics for the year A.H. 1346 are based on the census taken in 1921.

Registration of births and deaths has now been in operation for 2 years.

Statistics of birth and death rates are only approximately reliable. They can only be accurate for those districts where there is a sub-registrar in the person of the officer in charge of the police station. Police officers are the only sub-registrars in the State.

*Births.*—4,555 births were registered giving a birth rate of 29.62 per mille per annum compared with a birth rate of 25.62 for the previous year.

**Table showing Births according to Race.**

Malays.	Chinese.	Indians.	Japanese.	Arab.	Javanese.	European.
4,407	128	9	2	3	5	1

**Table showing Births according to Sex.**

Males.	Females.
2,326	2,229

*Deaths.*—4,847 deaths were registered giving a death rate of 31.52 per mille per annum compared with a death rate of 32.38 for the previous year.



Table showing Causes of Deaths.

Disease.	A.H. 1345.	A.H. 1346.
Fever .. .. .	1,909	2,311
Convulsions .. .. .	690	643
Malaria .. .. .	481	540
Beri Beri .. .. .	541	246
Bowel complaints other than dysentery	416	175
Old age .. .. .	195	191
Dysentery .. .. .	136	175
Respiratory diseases .. .. .	132	104
Still born .. .. .	78	117
Puerperal fever .. .. .	65	64
Cardiac diseases .. .. .	40	82
Accidents .. .. .	19	50
Other causes .. .. .	278	149

Table showing Deaths according to Race.

Malays.	Chinese.	Arab.	Japanese.	Javanese.	Indians.
4,511	307	5	2	6	16

Table showing Deaths according to Age.

Under 12 months.	2 years.	3 years.	4—12 years.	Adults.
1,619	154	148	460	2,466

Table showing Deaths according to Sex.

Males.	Females.
2,684	2,163

*Infant mortality.*—There were 1,619 deaths of children under one year. The infant mortality rate or rate per annum per 1,000 births was 355.45 compared with 356.00 for 1927. The infant mortality rates per annum per 1,000 births for the 4 more important towns compared with 1927 are as follows:—

Districts.	Infant mortality rate per mille.	
	1927.	1928.
Besut .. .. .	147.14	217.05
Kuala Trengganu .. .. .	363.68	539.96
Dungun .. .. .	495.53	628.57
Kemaman .. .. .	592.05	599.05

This table indicates the much higher infant mortality rate in the towns than in the kampongs.

(2) *General European Population.*—The health of the Europeans in the State has been satisfactory.

Sick returns from the mines and rubber estate where Europeans are employed are tabulated below.

The total number of Europeans in the State on 31.12.28 was 47 including 4 children.

Property.	Total number of Europeans.	Number of European sick.	Total number of days sick.
Kretay Plantations	12	5	27
Freda Tin Mine ..	2	Nil.	Nil.
Bundi Tin Mine ..	Not available.		

(3) *European Officials.*—European Officials reside in the towns along the sea boards, which provide excellent health conditions. In the course of duty European officials proceed inland, for varying periods, to the several parts of the State where conditions are primitive, and not without danger to health. In spite of this however the sick rate is low. Two officials have had recurrent attacks of malaria which from clinical evidence appear to be relapses of an infection contracted before arrival in Trengganu.

Table showing the Sick, Invaliding, and Death Rates of European Officials.

Trengganu.	1928.
Total number of Officials resident .. .. .	20
Average number resident .. .. .	16
Total number on Sick List .. .. .	4
Total number of days on Sick List .. .. .	33
Average daily number on Sick List .. .. .	.09
Percentage of sick to average number resident .. .. .	25
Average number of days on Sick List for each patient .. .. .	8.25
Average sick time to each resident .. .. .	2.06
Total number invalided .. .. .	Nil.
Percentage of Invalidings to total residents .. .. .	Nil.
Total deaths .. .. .	Nil.
Percentage of Deaths to total residents .. .. .	Nil.
Percentage of Deaths to total average number resident .. .. .	Nil.
Number of cases of sickness contracted away from residence .. .. .	Nil.

(4) *Native Officials.*—A register of native officials is not available. The total number of native officials treated during the year was 3,947 including 1,331 Police. 3 native officials were invalided from the service during the year.

### III. HYGIENE AND SANITATION.

#### (a) General review of work done and progress made.

The Government of the Straits Settlements has not yet been able to second a health officer for service in Trengganu. The appointment was approved eighteen months ago.

During the year the work of sanitation has been maintained. The Town Board in each of the principal towns viz.: at Kuala Trengganu, Chukai, Dungun, and Besut has continued routine work, but little progress can be expected until expert direction, and supervision is instituted. The improvement in the standard of living noted last year still continues. Attention to personal hygiene is producing a more refined sense of dignity amongst the better class native, and is slowly making him dissatisfied with the dirt and untidiness in which he has been born and bred.

#### (I) Preventive Measures.

*Malaria.*—The prevention of malaria is still a serious problem for the Public Works Department on the road construction now proceeding. Coolies are being imported for this work, and measures are being considered to deal with the proper housing and care of them.

On the large rubber estate at Kretay an energetic programme of sanitation, and prevention is being carried out. The Proprietors have sanctioned a reorganization of the medical and sanitary service on the Estate. The difficulty of obtaining trained personnel is a matter of concern, but there are prospects of this being overcome. Systematic oiling, and draining have been introduced. Old insanitary cooly lines have been abandoned. New cooly lines on sanitary principles have been erected. Centralization of cooly lines on healthy sites has been adopted.



*Vaccination.*—There were 6,582 vaccinations performed during the year.

## (II) General Measures of Sanitation.

The absence of a system of sewage disposal remains a menace to public health. The administrative obstacles in the way of providing for the disposal of sewage are largely financial and topographical. The towns are not planned, and consist of a conglomeration of shop houses and native dwellings. Whilst town planning is proceeding it must be, of necessity, a slow process. In the meantime the introduction of even the simplest system of night soil collection, and disposal is not easy.

Scavenging in the more important towns is done under the direction of the Town Board or District Officer.

Refuse is collected, dumped, and burnt in dry weather, and buried in wet weather.

Water supply. Wells provide water for both drinking and ablution purposes. The proposal to introduce a pipe borne system of water supply to Kuala Trengganu has had to be held over for financial reasons.

The Sanitary Inspectors supervise drain cleaning, and disposal of refuse. They inspect markets, and food, and occasionally pay house to house visits.

## (III) School Hygiene.

There is no systematic inspection of schools.

## (IV) Labour Conditions.

There is no labour code in force in the State. Sick Returns are received from the undermentioned Estates and Mines.

Estate or Mine.	Average labour force.	No. of deaths.	Death rate %.
Kretay Cocoanut and rubber plantations .. ..	884	25	2.82
Bundi Tin Mines .. ..	540	6	1.11
Freda Tin Mines .. ..	85	6	7.05
Nanyo Kogyo Koshi Mines ..	719	9	1.25

## (V) Housing and Town Planning.

Town planning is proceeding at Kuala Trengganu, Chukai, Dungun and Kampong Raja Besut.

## (VI) Food in relation to Health and Diseases.

Daily inspections of markets and slaughter houses are made by the Sanitary Inspector.

### (b) Measures taken to spread the knowledge of Hygiene and Sanitation.

District Officers are in possession of a small hand book on Hygiene and Sanitation, and have been instructed to educate the people in their districts in the elements of hygiene and sanitation.

### (c) Training of Sanitary Personnel. Nil.

### (d) Recommendations for future work.

What was written in last year's report still holds good.

With the establishment of a State Health Department under the direction of a health officer the following important requirements, amongst others, will be investigated and considered, and the necessary data submitted to Government for deliberation.

1. The introduction of a system of bucket latrines and night soil collection for Kuala Trengganu, and Chukai, and in due course of time for the other smaller towns.
2. The necessity of a pipe borne system of water supply for Kuala Trengganu.
3. The provision of adequate public latrine accommodation in the large towns.
4. The provision of adequate bathing facilities.
5. The desirability of the incineration of town refuse.
6. The erection of, and supervision of sanitary abattoirs.
7. The practicability of introducing a system of rural sanitation.
8. The necessity of urging the responsibilities of sanitation on the District Officers.



#### IV. PORT HEALTH WORK AND ADMINISTRATION.

The Government of Trengganu agreed to subscribe to the recommendations of the International Sanitary Conference 1926.

As far as it is possible the requirements of the International Sanitary Conference will be met.

#### V. MATERNITY AND CHILD WELFARE.

An ante natal and child welfare clinic was opened in February at Kuala Trengganu. A shop house adjacent to the Town Dispensary has been rented, and equipped as a clinic communicating with the dispensary.

Whilst the clinic is primarily for ante natal examinations and child welfare work its scope has been allowed to embrace work amongst women generally. In consequence many women have come who otherwise would not have gone to the dispensary for treatment. Although this has led sometimes to overcrowding, it has been found that women very often come for treatment themselves first, and on subsequent visits will bring their children also for treatment.

The ante natal work at the clinic co-operates with the maternity ward at the hospital.

Miss R. Moreira was nurse in charge of the clinic from 21.2.28 to 14.10.28.

The appointment of a European sister has been considered necessary for the development of the work of the clinic. This new appointment has been approved by Government but has been postponed.

The maternity ward at the hospital will be ready to receive patients in January 1929.

The approved staff now consists of:—

- 1 Maternity Nurse.
- 2 Pupil Mid-wives.
- 3 Female attendants.

*Ante natal.*—During the period February to December 31st, 51 women came for ante natal examination with total attendances of 168. Complete histories were taken and thorough physical examinations made. Of these cases 19 labours were conducted either by the maternity nurse or medical officer.

*Maternity.*—43 labours were conducted divided as 21 labours in the district and 22 at the hospital. A total of 112 visits were made in the district. Of the district cases one was H.H. The Sultana and one the wife of an European official. In addition there were attendances on 3 cases of abortion, 3 cases of retained placenta, and 1 case of post partum haemorrhage.

*Post Puerperal.*—7 cases of post puerperal Beri Beri came for treatment with total attendances of 32.

*General.*—506 women were treated for general diseases, and diseases peculiar to women with total attendances of 1,279.

*Child welfare.*—66 infants under one year were under care with total attendances of 454. Detailed records are kept of these cases.

135 children between the ages of 1 and 3 were treated with total attendances of 407.

181 children between the ages of 4 and 12 were treated with total attendances of 624.

The total number of new cases attending the clinic was 1,035 with total attendances of 4,032. These figures do not include women and children who have attended the clinic on Saturday mornings for the treatment of yaws and of whom there were 649 with total attendances of 847.

A total of all new cases of 1,684 with 4,879 attendances is therefore to be recorded.

#### VI. HOSPITALS, DISPENSARIES AND VENEREAL CLINICS.

The total number of new cases treated in the Hospital, at the Dispensaries, Clinic, Gaol, and Police was 37,349 with total attendances of 54,430 compared with 20,147 and total attendances of 28,418 for 1927.

*Hospital.*—The only Government Hospital in Trengganu is situated at Kuala Trengganu and consists of:—

Administration block with offices, dispensary, laboratory and operating theatre.

2 wards of 20 beds	for males.
1 ward of 20 beds	for females.
1 ward of 20 beds	for vagrants.
1 ward of 8 beds	for lepers.
1 maternity ward of 8 beds.	

Of these wards one is a new male ward opened in January 1928.

The maternity ward has at the time of writing just been completed and is now ready for occupation.

During the year hospital accommodation has been severely taxed and overcrowding has necessitated a new ward, the building of which has been approved by Government. Work on this ward will be commenced shortly.

The important districts of Kemaman and Besut are still without hospitals. Government has not yet been able to appropriate money for the purpose of building hospitals in these districts. The claims of Kemaman are receiving the consideration of Government, and if the financial condition of the State will admit, there is every reason to expect that the building of a hospital at Kemaman will be sanctioned.

#### Record of hospital work during the year.

There were 1,267 admissions to the hospital during the year with 61 remaining from 31.12.27 giving a total of 1,328 compared with 892 admissions and 57 remaining from 31.12.26 giving a total of 949 for 1927.

The growth of the hospital since its opening in 1924 is shown in the following table.

Year.				Admissions.
1924	..	..	..	126
1925	..	..	..	382
1926	..	..	..	764
1927	..	..	..	892
1928	..	..	..	1,267

There were 35 deaths during the year with a percentage death rate to the number of admissions of 2.76 compared with 31 deaths and a percentage of 3.69 for 1927.

The following diseases were most in evidence. A comparison is made with the same diseases during 1927.

Diseases.	1927.	Deaths.	1928.	Deaths.
	No. of cases.		No. of cases.	
Yaws .. .. .	152	Nil.	240	Nil.
Malaria .. .. .	84	3	239	7
Bowel Diseases .. .. .	185	2	187	7
Beri Beri .. .. .	45	2	56	1
Influenza .. .. .	65	Nil.	41	Nil.
Venereal Diseases .. .. .	96	Nil.	127	Nil.
Pulmonary tuberculosis .. .. .	17	7	15	2

The causes of death in the hospital were:—

Malaria .. .. .	7	Cardiac diseases .. .. .	8
Dysentery .. .. .	7	Pnuemonia .. .. .	1
Pulmonary tuberculosis	2	Cholecystitis .. .. .	2
Lympho-sarcoma .. .. .	1	Peritonitis .. .. .	1
Cancer of the liver .. .. .	1	Acute Nephritis .. .. .	1
Beri Beri .. .. .	1	Senility .. .. .	1
Cerebral haemorrhage .. .. .	1	Shock following injury .. .. .	1



*Maternity.*—22 labours were conducted in the General ward at the hospital during the year compared with 11 during 1927.

*Surgical.*—266 surgical operations were performed during the year classified as 29 major operations and 237 minor operations compared with 130 operations classified as 24 major operations and 106 minor operations for 1927.

The major operations were:—

No.	Diagnosis.	Operation.	Anaesthetic.	Result.
1	Inguinal hernia ..	Radical cure - modified Bassini's ..	Novocain infiltration	Cured.
2	Hydrocele .. ..	Radical cure .. ..	Do.	Do.
3	Do. .. ..	Do. .. ..	Spinal ..	Do.
4	Do. .. ..	Do. .. ..	Novocain infiltration	Do.
5	Intestinal obstruction (strangulated hernia)	Relief of obstruction and radical cure ..	Do.	Do.
6	Stab wound of abdomen	Laparotomy and intestinal repair .. ..	Do.	Do.
7	Duodenal ulcer ..	Gastro-jejunostomy Posterior no loop ..	General ..	Complete disappearance of symptoms.
8	Infected Hydrocele ..	Sac removed and drainage provided ..	Novocain infiltration	Cured.
9	Inguinal hernia ..	Radical cure - modified Bassini's .. ..	Do.	Do.
10	Hydrocele .. ..	Radical cure .. ..	Do.	Do.
11	Do. .. ..	Do. .. ..	Do.	Do.
12	Do. .. ..	Do. .. ..	Do.	Do.
13	Do. .. ..	Do. .. ..	Do.	Do.
14	Massive enlargement of inguinal and femoral glands .. ..	Excision .. ..	Do.	Do.
15	Contracture of the leg	Reduction and fixation	General ..	Do.
16	Cholecystitis .. ..	Cholecystotomy ..	Do. ..	Relieved.
17	Tumour in the abdomen	Laparotomy (carcinoma of liver) .. ..	Do. ..	Died.
18	Hernia .. ..	Radical cure - modified Bassini's .. ..	Novocain infiltration	Cured.
19	Appendicitis .. ..	Appendicectomy ..	Do.	Do.
20	Hernia .. ..	Radical cure - modified Bassini's .. ..	Do.	Do.
21	Appendicitis .. ..	Appendicectomy ..	Do.	Do.
22	Hernia and hydrocele..	Radical cures .. ..	Do.	Do.
23	Peritonitis .. ..	Laparotomy and appendicectomy .. ..	General ..	Died.
24	Hydrocele .. ..	Radical cure .. ..	Novocain infiltration	Cured.
25	Empyema .. ..	Resection of rib with drainage .. ..	Do.	Relieved.
26	Appendicitis .. ..	Appendicectomy ..	Do.	Cured.
27	Do. .. ..	Do. .. ..	Do.	Do.
28	Retro-Pharyngeal abscess .. ..	Exploration and drainage .. ..	General ..	Do.
29	Perinephritic abscess..	Exploration through lumbar incision-drainage .. ..	Novocain infiltration	Do.

Special examinations at the hospital:—

Gynaecological .. ..	16 cases.
Nose throat and ear .. ..	69 „
Eye .. ..	20 „



**Laboratory.**

The list following shows the work done during the year at the Hospital Kuala Trengganu.

**(a) Blood.**

Total number of films examined	..	..	..	..	1,433
Benign Tertian Parasites	..	..	..	..	102
Quartan Parasites	..	..	..	..	3
Sub-tertian Parasites	..	..	..	..	33
Crescents	..	..	..	..	17
Filaria	..	..	..	..	4
Negative	..	..	..	..	1,274

**(b) Sputa.**

Total number examined	..	..	..	..	29
Tubercle Bacilli	..	..	..	..	13
Negative	..	..	..	..	16

**(c) Pus.**

Total number examined	..	..	..	..	7
For Gonococci—positive	..	..	..	..	4
Negative	..	..	..	..	3

**(d) Faeces.**

Total number examined	..	..	..	..	1,720
Ankylostoma ova only	..	..	..	..	22
Ascaris ova only	..	..	..	..	175
Tricocephalus Dispar ova only	..	..	..	..	73
Oxyuris Vermicularis ova only	..	..	..	..	21
Ankylostoma, Ascaris, and T. Dispar	..	..	..	..	327
Ankylostoma, and Ascaris	..	..	..	..	123
Ankylostoma, and T. Dispar	..	..	..	..	64
Ascaris, and T. Dispar	..	..	..	..	873
Entamoeba Histolytica	..	..	..	..	21
Entamoeba Coli	..	..	..	..	21
Negative	..	..	..	..	50

**(e) Serums.**

Total number examined	..	..	..	..	7
For Tryponema pertenu (dark ground illumination)	..	..	..	Positive	4
				Negative	3

**(f) Agglutinations—Widal reaction.**

Total number of serums put up	..	..	..	..	28
Bacillus Typhosus				Positive	1
				Negative	6
				A Positive	Nil
Bacillus paratyphosus				A Negative	7
				B Positive	1
Bacillus paratyphosus				B Negative	6
				C Positive	Nil
Bacillus paratyphosus				C Negative	7

**(g) Cultures.**

(1) <i>Sub-Cultures.</i>					
Bacillus Typhosus-Singapore Strain	..	..	..	..	10
Bacillus Paratyphosus A Singapore Strain	..	..	..	..	10
Bacillus Paratyphosus B Singapore Strain	..	..	..	..	10
Bacillus Paratyphosus C Singapore Strain	..	..	..	..	10
(2) <i>Pus Cultures.</i>					
From gall bladder—mixed cocci	..	..	..	..	1
From infected hydrocele—mixed cocci	..	..	..	..	1
(3) <i>Serum Cultures.</i>					
From yaws lesions—Negative	..	..	..	..	1
(4) <i>Catgut Cultures.</i>					
? Sterile—Negative	..	..	..	..	3
(5) <i>Faeces Cultures.</i>					
Negative	..	..	..	..	4

*Dispensaries.*—New Dispensaries were opened early in the year at Dungun, Kuala Brang and Besut. These with the Dispensaries at Kuala Trengganu and Kemaman make a total of five Dispensaries in the State.

The dispensaries are in charge of reliable dressers.

The main details of outpatient work are tabulated as follows:—

District.	No. of new cases.	Total No. of attendances.	Domiciliary visits.	No. of itineraries.
Kuala Trengganu ..	8,224	12,450	719	Nil.
Kemaman .. ..	8,674	12,900	109	2
Besut .. ..	6,928	10,135	91	37
Kuala Brang .. ..	2,349	2,954	80	63
Dungun .. ..	2,309	2,612	150	11
Hospital out-patients and Travelling Dresser ..	3,637	4,149	Nil.	Nil.
Clinic .. ..	1,684	4,879	"	"
At Police Stations ..	1,168	1,168	"	"
Prison out-patients ..	716	1,983	"	"

## VII. PRISONS AND ASYLUMS.

*Prison.*—One prison serves for the whole State. It is situated at Kuala Trengganu. Every police station contains a 'lock up' where prisoners are occasionally detained for varying short sentences.

The prison buildings are for the most part antiquated and leave much to be desired in the matter of sanitation. The question of a new prison on a new site has been considered by those in authority, but here again the financial handicap is serious.

The prison is used not only for the detention of prisoners but also for the detention of mental cases. The circumstances have been such that there has been no alternative. A discussion has taken place with a view to erecting a mental ward at the hospital instead of in the prison compound as was originally decided. Short of building a separate mental hospital this appears to be the most satisfactory way of dealing with mental cases requiring institutional treatment.

*Prison hospital.*—During the year there were 73 admissions with no death compared with 136 admissions with no death for 1927.

A table giving admissions, deaths, and death rates for the last 4 years is as follows:—

Year.	Admissions.	Deaths.	Death rate.
1925 ..	161	20	12.40%
1926 ..	224	6	2.67%
1927 ..	136	Nil.	Nil.
1928 ..	73	"	"

The total number of out-patients treated was 716 with total attendances of 1983 compared with 946 and 2,327 respectively for 1927.

The prevailing diseases were:—

	1926.	1927.	1928.
Influenza .. ..	123	125	68
Skin diseases .. ..	156	252	130
Bowel complaints .. ..	96	164	81
Intestinal worms .. ..	41	8	35
Malaria .. ..	12	8	6
Dysentery .. ..	18	1	1
Respiratory diseases .. ..	66	75	46

*Mental cases treated in the prison.*—17 mental cases were admitted to the prison for detention with 11 remaining from 1927 amounting to a total of 28 cases treated. There were 14 discharges and 2 deaths leaving 14 remaining on 31.12.28.

The cause of death was, in both cases, Acute mania.

### VIII. METEOROLOGY.

The total rainfall for 1928 was 166.73 inches compared with 91.30 for 1927.

The total rainfall for the last four years is given in a table below. The heaviest rainfall in 24 hours was 7.86 inches on February 20th. The highest temperature recorded was 96° on May 14th. The lowest temperature recorded was 70° on December 29th.

Year.	Total rainfall in inches.
1925 ..	110.95
1926 ..	137.04
1927 ..	91.30
1928 ..	166.73

### IX. SCIENTIFIC.

Nil.

#### A. REGISTER OF EUROPEAN OFFICIAL RESIDENTS.

District. Trengganu.

Period 1928.

No.	Name.	Rank.	Date of Arrival.	Date of Departure.	No. of days Resident.	Remarks.
1	W. M. Millington ..	B.A.	1.1.28	6. 9.28	250	
2	A. J. Sturrock ..	"	31.8.28	31.12.28	123	
3	J. G. Black ..	A.A.T.	1.1.28	"	365	
4	M. C. Hay ..	A.A.K.	"	"	"	Kemaman.
5	P. A. B. McKerron ..	A.A.B.	"	5. 6.28	157	Besut.
6	E. V. G. Day ..	"	21.4.28	31.12.28	255	"
7	G. A. de C. de Moubray..	C. of L. & Mines	1.1.28	"	365	
8	H. P. Bryson, M.C. ..	Asst. C. of L.	"	"	"	
9	P. Trump ..	S.E.	"	"	"	
10	W. W. Davidson ..	E.E.	"	"	"	
11	A. Wear ..	A.E.	25.5.28	"	221	
12	G. O. Dorrity ..	Asst. to S.E.	1.1.28	"	365	
13	D. M. McDiarmid ..	A.E.	"	9. 5.28	130	Besut.
14	J. V. T. Campbell ..	"	"	31.12.28	365	"
15	Dr. N. H. Harrison ..	C.M.O.	"	"	"	
16	L. D. Meyer ..	S. of S.	"	3.10.28	277	
17	T. Kitching ..	"	23.9.28	31.12.28	95	
18	R. A. Terry ..	Surveyor	1.1.28	"	365	
19	L. L. Mills ..	C. of P.	"	"	"	

#### B. REGISTER OF NATIVE OFFICIAL RESIDENTS.

Not available.



## C. REGISTER OF EUROPEAN PATIENTS ON SICK LIST.

District. Trengganu.

Period. 1.1.28—31.12.28.

No.	Name.	Rank.	ON SICK LIST.		No. of days.	Diseases.	Result.	Remarks.
			From	To				
1	L. L. Mills ..	C. of P.	5. 1.28	10. 1.28	6	Malaria ..	Cured	
	—	—	24.11.28	25.11.28	2	„ ..	„	
2	E. V. G. Day ..	A.A. Besut	2. 8.28	6. 8.28	5	Injuries ..	„	
3	J. V. T. Campbell	A.E. Besut	2.10.28	10.10.28	9	Dental ..	„	
4	G. O. Dorrity ..	Asst. to S.E.	14. 2.28	24.10.28	11	Diarrhœa	Relieved	

Total 4

Total 33

## D. REGISTER OF NATIVE PATIENTS ON SICK LIST.

Not available.

## TABLE I.

## Medical Staff.

Chief Medical Officer .. Dr. N. H. Harrison remained in charge throughout the year.

## Principal Members of Subordinate Staff.

*Dressers:—*

Dresser Grade I ..	..	Mr. T. A. Menon in charge of Town Dispensary, Kuala Trengganu.
„ „ II ..	..	Mr. Ceng Dieu Huang in charge of Dispensary, Kemaman.
„ „ II ..	..	Inche' Gaffor b. H. Smahon in charge of Dispensary, Dungun.
„ „ III ..	..	Inche' Alias bin Esa in charge of Dispensary, Besut.
„ „ III ..	..	Mr. K M. Pillai.
„ „ III ..	..	Mr. L. F. Allelui.
Probationer dressers	..	Inche' Hassan bin Busu.
		Inche' Yunus bin Sibi.
		Inche' Yazib bin Haji Mohamed.
		Inche' Yusoff bin Haji Ibrahim
		Mr. Wee Biau Leng.
		Mr. D. L. Gomez.
Ungraded .. ..	..	Mr. T. K. Maurice in charge of Dispensary, Kuala Brang.
		Mr. C. L. Fernandez in charge of the hospital.
Steward .. ..	..	Mr. Ng Teng Kiat.
Assistant to Steward	..	Inche' Muda bin Musa.
Sanitary Inspector	..	Mr. V. P. Pillai.
Chief Clerk .. ..	..	Inche' Abdullah bin Alias.
Clerk Grade III ..	..	Inche' Jusoh bin Hitam.
„ „ III ..	..	Inche' Muda bin Abdullah.

## TABLE II.

## Financial.

Estimates 1,346 .. ..	..	..	..	..	..	..	\$60,561.07
Expenditure—							
Personal Emoluments	..	..	..	..	..	..	26,297.71
Annually Recurrent	..	..	..	..	..	..	22,251.67
Special Expenditure	..	..	..	..	..	..	4,206.40
						Total ..	\$52,755.78
Receipts .. ..	..	..	..	..	..	..	\$ 1,049.55

## TABLE III.

## Return of Statistics of Population for the year.

Not available.

TABLE IV.  
Meteorological Return for the year 1928.

		TEMPERATURE.					RAINFALL.		WINDS.	REMARKS.
		Solar Maximum.	Minimum on Grass.	Shade Maximum.	Shade Minimum.	Range.	Mean.	Amount in Inches.		
January	..	126.74		83.91	76.37	7.54	80.14	5.18		
February	..	119.66		82.72	76.17	6.55	79.44	23.05		
March	..	135.00		87.33	76.99	10.34	82.16	15.02		
April	..	132.43		85.74	77.49	8.25	81.61	11.58		
May	..	136.70		86.96	77.69	9.27	82.32	4.36		
June	..	133.17		86.79	77.77	9.02	82.28	2.97		
July	..	132.68		87.02	76.87	10.15	81.94	3.41		
August	..	131.39		86.59	78.06	8.53	82.32	4.27		
September	..	129.57		82.00	77.59	4.41	79.79	7.57		
October	..	126.27		81.04	77.31	3.73	79.17	19.89		
November	..	116.87		82.42	76.93	5.49	79.67	32.20		
December	..	114.82		77.18	74.00	3.18	75.59	37.23		

TABLE V.

Gaol and General Hospitals, Kuala Trengganu.

Return of Diseases and Deaths (In-Patients) for the year 1928.

DISEASES	Remaining in Hospital at end of 1927	YEARLY TOTAL		Total cases treated	Remaining in Hospital at end of 1928	REMARKS
		Admissions	Deaths			
<b>Epidemic, Endemic, and Infectious Diseases.</b>						
Enteric Group:—						
(a) Typhoid Fever ..		2		2		
(b) Paratyphoid, A..						
(c) Paratyphoid, B..		1		1		
(d) Type not defined.						
Malaria:—						
(a) Tertian ..	1	39	1	40		
(b) Quartan ..		1		1		
(c) Aestivo-autumnal	3	23	1	26		
(d) Cachexia ..		189	5	189	5	
(e) Blackwater ..						
Measles .. ..		2		2		
Influenza .. ..	2	49		51		
Mumps .. ..		10		10	1	
Dysentery:—						
(a) Amoebic ..	1	28	4	29	3	
(b) Bacillary ..						
(c) Chronic ..		3	3	3		
(d) Undefined or due to other causes.						
Leprosy .. ..		4		4	2	
Erysipelas .. ..		1		1		
Other Epidemic Diseases:—						
(a) Rubeola (German Measles) ..						
(b) Varicella (Chicken Pox).		1		1		
(c) Kala-azar ..						
(d) Phlebotomus Fever ..						
(e) Epidemic Dropsy.						
(f) Dengue ..		1		1		
(g) Yaws ..	27	247		274	29	
(h) Trypanosomiasis.						
Tuberculosis, Pulmonary and Laryngeal ..	1	15	2	16	1	
Tuberculosis of Bones and Joints ..		1		1		
Syphilis:—						
(a) Primary ..		11		11		
(b) Secondary ..						
(c) Tertiary ..		4		4	2	
(d) Hereditary ..						
(e) Period not indicated ..						
(f) Syphilitic Aortitis		1		1		
Soft Chancre ..		10		10		
Gonorrhoea and its com- plications ..	4	72		76	2	
Total carried forward ..	39	715	16	754	45	



TABLE V.—*Contd.*

Gaol and General Hospitals, Kuala Trengganu.

Return of Diseases and Deaths (In-Patients) for the year 1928.

DISEASES	Remaining in Hospital at end of 1927	YEARLY TOTAL		Total cases treated	Remaining in Hospital at end of 1928	REMARKS
		Admissions	Deaths			
Brought forward..	39	715	16	754	45	
<b>Epidemic, Endemic, and Infectious Diseases.— (Contd.)</b>						
Gonorrheal Ophthalmia.		3		3	1	
Gonorrheal Epididymitis.		1		1	1	
Gonorrheal Arthritis ..	1	16		17		
Bubo .. ..	2	7		9	1	
Granuloma Venereum..						
<b>II. General Diseases not mentioned above.</b>						
Cancer or other malignant ..						
Tumours of the Stomach or Liver ..						
Cancer or Liver ..		1	1	1		
Lymphosarcoma Neck.		1	1	1		
Tumours non malignant.		1		1		
Acute Rheumatism ..		6		6		
Chronic Rheumatism ..		2		2		
Beri-Beri .. ..	3	54	1	57	3	
Anaemia:—						
(a) Pernicious ..						
(b) Other Anaemias and Chlorosis.		2		2		
(c) Debility ..		4		4		
Alcoholism ..		2		2		
Apoplexy:—						
(a) Haemorrhage ..						
(b) Embolism ..						
(c) Thrombosis ..						
(d) Concussion of Brain ..		1		1		
<b>III. Affections of the Nervous System and organs of the Senses.</b>						
Paralysis:—						
(a) Hemiplegia ..	2	3	1	5		
Other forms of Mental Alienation ..	11	17	2	28	12	
Epilepsy .. ..		1		1	1	
A. Hysteria ..		1		1		
B. Neuritis ..						
C. Neurasthenia ..						
Other affections of the Nervous System such as Paralysis Agitans..		2		2	2	
Total carried forward ..	58	840	22	898	66	

TABLE V.—*Contd.*

Gaol and General Hospitals, Kuala Trengganu.

Return of Diseases and Deaths (In-Patients) for the year 1928.

DISEASES	Remaining in Hospital at end of 1927	YEARLY TOTAL		Total cases treated	Remaining in Hospital at end of 1928	REMARKS
		Admissions	Deaths			
Brought forward..	58	840	22	898	66	
<b>III. Affections of the Nervous System, and Organs of the Senses. —(Contd.)</b>						
Affections of the organs of Vision ..						
(a) Diseases of the Eye ..		7		7	1	
(b) Conjunctivitis ..						
(c) Trachoma ..						
(d) Tumours of the Eye ..		2		2		
(e) Other affections of the Eye ..		3		3		
(f) Staphyloma ..		1		1		
(g) Corneal Ulcer ..		2		2		
(h) Ophthalmia ..		4		4		
Affections of the Ear or Mastoid Sinus ..						
Otitis Media ..		9		9		
<b>IV. Affections of the Circulatory System.</b>						
Other Diseases of the Heart:—						
(a) Valvular ..	1	15	6	16	1	
Mitral ..						
Aortic ..						
Tricuspid ..						
Pulmonary ..						
(b) Myocarditis ..		1	1	1		
Diseases of the Veins..						
Haemorrhoids ..		2		2		
Varicose Veins ..						
Phlebitis ..						
Diseases of the Lym- phatic System ..						
Lymphanangitis ..						
Lymphangitis ..						
(non specified) ..		2		2		
<b>V. Affections of the Res- piratory System.</b>						
Bronchitis:—						
(a) Acute ..		4		4		
(b) Chronic ..						
Pneumonia:—						
(a) Lobar ..		2	1	2		
Pleurisy ..		1		1		
Total carried forward ..	59	895	30	954	68	

TABLE V.—*Contd.*

Gaol and General Hospitals, Kuala Trengganu.

Return of Diseases and Deaths (In-Patients) for the year 1928.

DISEASES	Remaining in Hospital at end of 1927	YEARLY TOTAL		Total cases treated	Remaining in Hospital at end of 1928	REMARKS
		Admissions	Deaths			
Brought forward..	59	895	30	954	68	
<b>V. Affections of the Respiratory System. —</b> ( <i>Contd.</i> )						
Empyema ..		1		1	1	
Asthma ..		5		5		
<b>VI. Diseases of the Digestive System.</b>						
A. Diseases of the Teeth or Gums ..						
Carries ..		1		1		
Pyorrhoea ..		1		1		
Alveolar Abscess ..		2		2		
Affections of the Pharynx or Tonsils ..						
Pharyngitis ..		1		1		
Retro-Pharyngeal Abscess ..		1		1	1	
Peritonsillar Abscess ..		1		1		
A. Ulcer of the Stomach.						
B. Ulcer of the Duodenum ..	1	1		2		
Other affections of the Stomach ..						
Gastritis ..						
Dyspepsia ..		2		2		
Diarrhoea and Enteritis 2 years and over ..						
Diarrhoea ..		11		11		
Enteritis ..		2		2		
Colitis ..						
Ulceration ..						
Sprue ..		2		2		
Ankylostomiasis ..	2	61		63		
Diseases due to Intesti- nal Parasites ..						
(a) Cestoda (Taenia)						
(b) Trematoda (Flukes) ..						
(c) Nematoda (other than ankylos- toma) ..						
Ascaris ..	2	74		76	3	
Trichocephalus dispar..						
Trichina ..						
Dracunculus ..						
Strongylus ..						
Oxyuris ..						
Appendicitis ..	1	9		10	2	
Hernia ..		5		5		
Total carried forward..	65	1,075	30	1,140	75	



TABLE V.—*Contd.*

Gaul and General Hospitals, Kuala Trengganu.

Return of Diseases and Deaths (In-Patients) for the year 1928.

DISEASES	Remaining in Hospital at end of 1927	YEARLY TOTAL		Total cases treated	Remaining in Hospital at end of 1928	REMARKS
		Admissions	Deaths			
Brought forward..	65	1,075	30	1,140	75	
<b>VI. Diseases of the Digestive System.—</b> <i>(Contd.)</i> .						
Hernia Strangulated ..		1		1		
Affections of the Anus, Fistula ..						
Other affections of Intestine ..						
Entreroptosis ..						
Constipation ..		1		1	1	
Biliary Calculus ..						
Cholecystitis ..		2	2	2		
Other affections of the Liver ..						
Abscess ..	1			1		
Hepatitis ..						
Jaundice ..						
Peritonitis (of unknown cause) ..		1	1	1		
<b>VII. Diseases of the Genitourinary System</b> <b>(non venereal).</b>						
Acute Nephritis ..	2	2	1	4	1	
Chronic Nephritis ..		7		7	2	
Other affections of the Kidneys Peri-Nephritic Abscess ..		1		1	1	
Urinary Calculus ..		1		1		
Diseases of the Urethra. (a) Stricture ..						
(b) Rupture of Urethra ..		1		1		
Diseases (non Venereal) of Man ..						
Epididymitis ..		3		3		
Orchitis ..		4		4		
Hydrocele ..	4	11		15		
Cysts or other non mali- gnant ..		1		1		
Tumours of the Ovaries ..						
A. Metritis ..						
B. Other affections of the Female Genital Organs						
Displacement of Urethra ..						
Amenorrhoea ..						
Dysmenorrhoea ..		2		2		
Leucorrhoea ..						
Total carried forward..	72	1,113	34	1,185	80	

TABLE V.—*Contd.*

Gaol and General Hospitals, Kuala Trengganu.

Return of Diseases and Deaths (In-Patients) for the year 1928.

DISEASES	Remaining in Hospital at end of 1927	YEARLY TOTAL		Total cases treated	Remaining in Hospital at end of 1928	REMARKS
		Admissions	Deaths			
Brought forward..	72	1,113	34	1,185	80	
<b>VIII. Puerperal State.</b>						
A. Normal Labour ..	1	20		21	1	
B. Accidents of Pregnancy ..						
(a) Abortion ..						
(b) Ectopic Gestation.						
(c) Other accidents of pregnancy ..						
(d) Abnormal Labour		2		2	1	
(e) Ante Natal ..		1		1		
<b>IX. Affections of the Skin and Cellular Tissues.</b>						
Gangrene ..		2		2		
Boils ..		3		3		
Abscess ..		21		21		
Whitlow ..						
Cellulitis ..		13		13	1	
Ulcers ..		40		40		
A. Tinea ..		2		2		
B. Scabies ..		9		9		
C. Dermatitits ..		2		2	1	
Other Diseases of the Skins ..						
Erythema ..						
Urticaria ..						
Eczema ..		2		2		
Herpes ..		1		1		
Psoriasis ..						
Elephantiasis ..		1		1		
Myiasis ..						
Chigoes ..						
Cutaneous Leishmaniasis						
<b>X. Diseases of the Bones and Organs of Loco- motion (other than Tuberculous).</b>						
Diseases of Bones ..						
Osteitis ..	1			1		
Periosteitis ..		1		1		
Diseases of Joints ..						
Arthritis ..		1		1		
Synovitis ..		3		3	1	
<b>XI. Diseases of INFANCY.</b>						
Congenital Debility ..						
Congenital Syphilis ..		3		3		
Total carried forward..	74	1,240	34	1,314	85	

TABLE V.—*Contd.*

Gaol and General Hospitals, Kuala Trengganu.  
Return of Diseases and Deaths (In-Patients) for the year 1928.

DISEASES	Remaining in Hospital at end of 1927	YEARLY TOTAL		Total cases treated	Remaining in Hospital at end of 1928	REMARKS
		Admissions	Deaths			
Brought forward..	74	1,240	34	1,314	85	
<b>XIII. Affections of Old Age.</b>						
Senility ..		1	1	1		
<b>XIV. Affections produced by External Causes.</b>						
Food Poisoning ..		4		4		
Attacks of Poisonous Animals ..						
Snake Bite ..						
Insect Bite ..		1		1		
Burns (by Fire) ..		4		4		
Wounds (by Fire arms).						
Wounds by Gunshot.		6		6		
Wounds (by cutting or stabbing Instruments).	1	36		37	3	
Contusion ..		5		5		
Circumcision ..		1		1		
Wounds (by Falls) ..		2		2		
Wounds (crushing eg, Railway accidents) ..		35		35	2	
Injuries Inflicted by Animals Bites, and Kicks.		3		3		
A. Dislocation ..		1		1		
B. Sprain ..		5		5		
C. Strain ..		1		1		
D. Fracture Femur ..		2	1	2		
„ of Lower Jaw.		1		1		
„ of Finger ..		1		1		
„ of Skull ..		1		1		
<b>XV. Ill-Defined Diseases.</b>						
A. Diseases not already specified or illdefined..						
Ascites ..		1		1		
Oedema ..						
Asthenia ..						
Shock ..		1	1	1		
Hyperpyrexia ..						
<b>N.B.—General.</b>						
Observation ..		4		4		
Plastic Repair of mouth ..		1		1		
<b>Total ..</b>	<b>75</b>	<b>1,357</b>	<b>37</b>	<b>1,432</b>	<b>90</b>	



TABLE VI.

Return of Diseases (Out-Patients) for the year 1928.

DISEASES					MALE	FEMALE
<b>I. Epidemic, Endemic, and Infectious Diseases.</b>						
1. Enteric Group.						
(a) Typhoid Fever	..	..	..	..	7	
(b) Paratyphoid A.	..	..	..	..		
(c) Paratyphoid B.	..	..	..	..		
(d) Type not defined	..	..	..	..		
2. Malaria.						
(a) Tertian	..	..	..	..	393	66
(b) Quartan	..	..	..	..	16	1
(c) Aestivo-autumnal	..	..	..	..	448	94
(d) Cachexia	..	..	..	..	1,683	388
(e) Blackwater	..	..	..	..		
(f) Fever unspecified	..	..	..	..	546	159
3. Measles	..	..	..	..	9	6
4. Whooping Cough	..	..	..	..	4	2
5. Diphtheria	..	..	..	..		2
6. Influenza	..	..	..	..	1,087	161
7. Mumps	..	..	..	..	66	9
8. Dysentery	..	..	..	..		
(a) Amoebic	..	..	..	..	59	13
(b) Bacillary	..	..	..	..	22	4
(c) Undefined or due to other causes	..	..	..	..	32	8
9. Leprosy	..	..	..	..	4	1
10. Other Epidemic Diseases	..	..	..	..		
(a) Rubeola (German Measles)	..	..	..	..		
(b) Varicella (Chicken-pox)	..	..	..	..	2	3
(c) Kala-azar	..	..	..	..		
(d) Phlebotomus Fever	..	..	..	..		
(e) Dengue	..	..	..	..	15	
(f) Epidemic Dropsy	..	..	..	..		
(g) Yaws	..	..	..	..	1,532	1,142
(h) Trypanosomiasis	..	..	..	..		
11. Tuberculosis, Pulmonary and Laryngeal	..	..	..	..	36	8
12. Syphilis	..	..	..	..		
(a) Primary	..	..	..	..	42	
(b) Secondary	..	..	..	..	8	
(c) Tertiary	..	..	..	..	62	8
(d) Hereditary	..	..	..	..	2	2
(e) Period not indicated	..	..	..	..	13	3
13. Soft Chancre	..	..	..	..	21	
14. A. Gonorrhoea and its complications	..	..	..	..	178	28
B. Gonorrhoeal Ophthalmia	..	..	..	..	5	1
C. Gonorrhoeal Arthritis	..	..	..	..	14	4
D. Granuloma Venereum	..	..	..	..		
15. Septicaemia	..	..	..	..	1	4
<b>II. General Diseases not mentioned above.</b>						
16. Tumours non-Malignant	..	..	..	..	32	2
17. Acute Rheumatism	..	..	..	..	969	243
18. Chronic Rheumatism	..	..	..	..	614	106
19. Beri-Beri	..	..	..	..	1,233	278
20. Diabetes (not including Insipidus)	..	..	..	..	13	9
21. Anaemia	..	..	..	..		
(a) Pernicious	..	..	..	..		
(b) Other anaemias and Chlorosis	..	..	..	..	418	130
Total carried forward..					9,586	2,885

TABLE VI.—*Contd.*

Return of Diseases (Out-Patients) for the Year 1928.

DISEASES					MALE	FEMALE
Brought forward..					9,586	2,885
<b>II. General Diseases not mentioned above—(Contd.)</b>						
22.	Diseases of the Thyroid Gland	..	..	..		
	(a) Exophthalmic Goitre	..	..	..		
	(b) Other diseases of the Thyroid Gland, Myxoedema	..	..	..	2	2
23.	Alcoholism	..	..	..	1	
<b>III. Affections of the Nervous System and Organs of Senses.</b>						
24.	Apoplexy	..	..	..		
	(a) Haemorrhage	..	..	..		
	(b) Embolism	..	..	..		
	(c) Thrombosis	..	..	..	1	
25.	Paralysis	..	..	..		
	(a) Hemiplegia	..	..	..	37	5
	(b) Other Paralysis	..	..	..		
26.	Epilepsy	..	..	..	4	
27.	Eclampsia, Convulsions (nonpuerperal) 5 years or over	..	..	..	1	
28.	Infantile Convulsions	..	..	..	3	2
29.	A. Hysteria	..	..	..		4
	B. Neuritis	..	..	..	504	158
	C. Neurasthenia	..	..	..	14	5
30.	Other affections of the Nervous system, such as Paralysis Agitans	..	..	..		
	(a) Scitica	..	..	..	4	2
31.	Affections of the Organs of Vision	..	..	..		
	(a) Diseases of the Eye	..	..	..		
	(b) Conjunctivitis	..	..	..	350	66
	(c) Trachoma	..	..	..		
	(d) Tumours of the Eye	..	..	..		
	(e) Other affections of the Eye	..	..	..	61	18
32.	Affections of the Ear or Mastoid Sinus	..	..	..	106	29
	(a) Foreign Body in the Ear	..	..	..	7	1
	(b) Eustachian Catarrh	..	..	..	4	1
	(c) Mastoiditis	..	..	..	11	5
<b>IV. Affections of the Circulatory System.</b>						
33.	Other Diseases of the Heart	..	..	..		
	(a) Valvular	..	..	..	27	12
	Mitral	..	..	..		
	Aortic	..	..	..		
	Tricuspid	..	..	..		
	Pulmonary	..	..	..		
	(b) Myocarditis	..	..	..	8	2
	(c) Disordered Action of the Heart	..	..	..	3	4
34.	Diseases of the Arteries	..	..	..		
	(a) Aneurism	..	..	..	6	2
	(b) Arterio-Sclerosis	..	..	..		
	(c) Other diseases	..	..	..		
35.	Diseases of the Veins	..	..	..		
	Haemorrhoids	..	..	..	31	10
	Varicose Veins	..	..	..	14	1
	Phlebitis	..	..	..		1
Total carried forward..					10,785	3,215

TABLE VI.—*Contd.*

## Return of Diseases (Out-Patients) for the Year 1928.

DISEASES					MALE	FEMALE
Brought forward..					10,785	3,215
<b>IV. Affections of the Circulatory System.—(Contd.)</b>						
36. Diseases of the Lymphatic System	..	..				
Lymphangitis	..	..			4	
Lymphadenitis, Bubo, (non-specific)	..	..			27	
37. Haemorrhage of undetermined cause	..	..			8	2
<b>V. Affections of the Respiratory system.</b>						
38. Diseases of the Nasal Passages	..	..	..			
Adenoids	..	..	..		2	2
Polypus	..	..	..		51	14
Rhinitis	..	..	..		2	
Coryza	..	..	..			
39. Affections of the Larynx	..	..	..		27	7
Laryngitis	..	..	..			
40. Bronchitis	..	..	..			
(a) Acute	..	..	..		640	107
(b) Chronic	..	..	..		192	50
41. Broncho-Pneumonia	..	..	..		4	1
42. Pneumonia	..	..	..			
(a) Lobar	..	..	..		12	2
(b) Unclassified	..	..	..			2
43. Pleurisy, Empyema	..	..	..		11	
44. Asthma	..	..	..		128	36
<b>VI. Diseases of the Digestive System.</b>						
45. A. Diseases of Teeth or Gums Caries, Pyorrhoea &c.					421	78
B. Other affections of the Mouth	..	..			55	18
Stomatitis	..	..	..			
Glossitis	..	..	..			
46. Affections of the Pharynx or Tonsils	..	..				
Tonsillitis	..	..	..		31	2
Pharyngitis	..	..	..		18	4
47. Other affections of the Stomach	..	..				
Gastritis	..	..	..		123	18
Dyspepsia	..	..	..		394	144
48. Diarrhoea and Enteritis	..	..	..			
Under two years	..	..	..		26	1
49. Diarrhoea and Enteritis	..	..	..			
Two years and over	..	..	..		291	37
Colitis	..	..	..			
Ulceration	..	..	..			
50. Ankylostomiasis	..	..	..		455	131
51. Diseases due to Intestinal Parasites	..	..				
(a) Cestoda (Taenia)	..	..	..			
(b) Trematoda (Flukes)	..	..	..			
(c) Nematoda (other than Ankylostomiasis)	..	..	..			
Ascaris	..	..	..		645	160
Trichocephalus dispar	..	..	..		85	25
Trichina	..	..	..			
Dracunculus	..	..	..			
Strongylus	..	..	..			
Oxyuris	..	..	..			
Total carried forward..					14,437	4,056



TABLE VI.—*Contd.*

## Return of Diseases (Out-Patients) for the Year 1928.

DISEASES					MALE	FEMALE
Brought forward..					14,437	4,056
<b>VI. Diseases of the Digestive System.—(Contd.)</b>						
(d) Coccidia	..	..	..	..		
(e) Other parasites	..	..	..	..	1	
(f) Unclassified	..	..	..	..	271	140
52. Appendicitis	..	..	..	..	8	1
53. Hernia	..	..	..	..	9	1
54. A. Affections of the Anus, Fistula, &c.	..	..	..	..	4	
B. Other affections of the Intestines	..	..	..	..		
Enteroptosis	..	..	..	..		
Constipation	..	..	..	..	2,878	551
55. Cirrhosis of the Liver	..	..	..	..		
(a) Alcoholic	..	..	..	..		
(b) Other forms	..	..	..	..	8	
56. Other affections of the Liver	..	..	..	..		
Abscess	..	..	..	..	2	1
Hepatitis	..	..	..	..		
Cholecystitis	..	..	..	..	1	
Jaundice	..	..	..	..	5	4
<b>VII. Diseases of the Genito-urinary System (non-Venereal). Tuberculous).</b>						
57. Acute Nephritis	..	..	..	..	58	14
58. Chronic	..	..	..	..	60	4
59. Urinary Calculus	..	..	..	..	4	2
60. Diseases of the Bladder	..	..	..	..		
Cystitis	..	..	..	..	44	4
61. Diseases of the Urethra	..	..	..	..		
(a) Stricture	..	..	..	..	18	
(b) Other	..	..	..	..	8	8
62. Diseases of the Prostate	..	..	..	..		
Hypertrophy	..	..	..	..		
Prostatitis	..	..	..	..	2	
63. Diseases (non-Venereal) of the Genital Organs of Man	..	..	..	..		
Epididymitis	..	..	..	..	3	
Orchitis	..	..	..	..	74	
Hydrocele	..	..	..	..	7	
Ulcer of Penis	..	..	..	..		3
64. A. Metritis	..	..	..	..		
B. Other affections of the Female Genital Organs	..	..	..	..		
Displacement of Uterus	..	..	..	..		
Amenorrhoea	..	..	..	..		48
Dysmenorrhoea	..	..	..	..		77
Leucorrhoea	..	..	..	..		3
65. Diseases of the Breast (non-puerperal)	..	..	..	..		
Mastitis	..	..	..	..		6
Abscess of Breast	..	..	..	..		
<b>VIII. Puerperal State.</b>						
66. A. Normal Labour	..	..	..	..		26
B. Accidents of Pregnancy	..	..	..	..		
(a) Abortion	..	..	..	..		1
(b) Ectopic Gestation	..	..	..	..		
(c) Other accidents of Pregnancy	..	..	..	..		3
Total carried forward..					17,902	4,953

TABLE VI.—*Contd.*

### Return of Diseases (Out-Patients) for the Year 1928.

DISEASES						MALE	FEMALE
Brought forward..						17,902	4,953
<b>VIII. Puerperal State.—(Contd.)</b>							
67.	Puerperal Haemorrhage	..	..	..			2
68.	Puerperal Septicaemia	..	..	..			7
69.	Sequelae of Labour	..	..	..			1
<b>IX. Affections of the Skin and Cellular Tissues.</b>							
70.	Boil	..	..	..	224		14
	Carbuncle	..	..	..	2		
71.	Abscess	..	..	..	129		21
	Whitlow	..	..	..	16		7
	Cellulitis	..	..	..	82		7
72.	A. Tinea	..	..	..	2,330		478
	B. Scabies	..	..	..	1,660		366
73.	Other diseases of the Skin	..	..	..			
	Erythema	..	..	..	5		
	Urticaria	..	..	..	20		1
	Eczema	..	..	..	382		55
	Herpes	..	..	..	24		9
	Psoriasis	..	..	..	3		9
	Elephantiasis	..	..	..	19		2
	Myiasis	..	..	..			
	Chigoes	..	..	..			
	Cutaneous Leishmaniasis	..	..	..			
	Ulcer	..	..	..	1,468		108
<b>X. Diseases of Bones and Organs of Locomotion (other than Tuberculous).</b>							
74.	Diseases of Bones	..	..	..	56		36
	Osteitis	..	..	..			
75.	Diseases of Joints	..	..	..			
	Arthritis	..	..	..	25		6
	Synovitis	..	..	..	22		11
<b>XI. Malformation</b>							
<b>XII. Diseases of Infancy.</b>							
76.	Congenital Debility	..	..	..	1		1
77.	Other affections of Infancy	..	..	..	1		
<b>XIII. Affections of Old Age.</b>							
78.	Senility	..	..	..	31		4
	Senile Dementia	..	..	..			
<b>XIV. Affections produced by External Causes.</b>							
79.	Food Poisoning	..	..	..			
	Botulism	..	..	..	4		3
80.	Attacks of poisonous animals	..	..	..			
	Snake Bite	..	..	..	6		
	Insect Bite	..	..	..	29		2
Total carried forward..						24,451	6,103

TABLE VI.—*Contd.*

## Return of Diseases (Out-Patients) for the Year 1928.

DISEASES				MALE	FEMALE
Brought forward..				24,451	6,103
<b>XIV. Affections produced by External Causes.—<i>Contd.</i></b>					
81. Other accidental Poisoning	..	..	..	1	
82. Burns (by Fire)	..	..	..	54	16
83. Burns (other than Fire)	..	..	..	17	8
84. Wounds (by cutting or stabbing Instruments)	..			2,098	202
85. Wounds (by Fall)	..	..	..	25	2
86. Wounds (by Machinery)	..	..	..	2	2
87. Wounds (crushing, e.g. railway accidents)	..			30	3
88. Injuries inflicted by Animals, Bites, Kicks, &c.	..			98	12
89. A. Over fatigue	..	..	..	5	1
B. Hunger or Thirst	..	..	..		
90. Exposure to heat	..	..	..		
Heatstroke	..	..	..	44	2
Sunstroke	..	..	..		
91. A. Dislocation	..	..	..	2	2
B. Sprain	..	..	..	261	38
C. Fracture	..	..	..	8	1
<b>XV. Ill-Defined Diseases.</b>					
92. A. Diseases not already specified or ill-defined	..				
Ascites	..	..	..		
Oedema	..	..	..	3	2
Asthenia	..	..	..		
Shock	..	..	..		2
Hyperpyrexia	..	..	..		
B. Malingering	..	..	..	1	
Total ..				27,100	6,396





